1: Drugs. 1991 Nov;42(5):877-94. Related Articles, Links

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Colfosceril palmitate. A review of the therapeutic efficacy and clinical tolerability of a synthetic surfactant preparation (Exosurf Neonatal) in neonatal respiratory distress syndrome.

Dechant KL, Faulds D.

Adis International Limited, Auckland, New Zealand.

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Colfosceril palmitate (dipalmitoylphosphatidylcholine) is the primary surface-active agent of natural lung surfactant and the major constituent of exogenous surface replacement preparations. Exogenous surfactants derived from either natural (i.e. animal and human) or synthetic sources are indicated for the prophylaxis and treatment of neonatal respiratory distress syndrome. One of the synthetic surfactants, Exosurf Neonatal, is the focus of this review. This preparation is composed of colfosceril palmitate plus cetyl alcohol and tyloxapol, which facilitate rapid spreading and adsorption of the surface-active agent at the air-alveolar interface. For review purposes, this preparation is referred to only as colfosceril palmitate. Comparative trials with air placebo have shown that colfosceril palmitate improves clinical outcome in infants weighing greater than 700g at birth by reducing mortality and increasing the number of infants who survive without bronchopulmonary dysplasia. It also reduces the number of deaths from respiratory distress syndrome and decreases the incidence of air leak events such as pulmonary interstitial emphysema and pneumothorax. Although colfosceril palmitate itself is very well tolerated and does not increase the incidence of most complications of prematurity or of respiratory distress syndrome, its use is associated with a higher incidence of apnoea of prematurity and pulmonary haemorrhage compared with air placebo, possibly because of earlier extubation of surfactant-treated infants following an improved clinical course and decreased pulmonary vascular resistance secondary to improved ventilation, respectively. Colfosceril palmitate thus has an established efficacy in the prophylaxis and treatment of premature infants with respiratory distress syndrome. Ongoing trials may identify whether prophylactic or rescue administration of the surfactant preparation is the preferred approach and whether different dosage regimens or different administration techniques impart greater therapeutic efficacy. Importantly, it also remains to be determined whether any of the available surfactant preparations, including Exosurf Neonatal, will provide distinct therapeutic advantages over the others.

Related Resources

Publication Types:

- Clinical Trial
- Randomized Controlled Trial
- Review
- Review, Tutorial

PMID: 1723378 [PubMed - indexed for MEDLINE]

1: Schweiz Med Wochenschr. 1975 Jun 21;105(25):810-5. Related Articles, Links

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Related Resources

[Comparison of Tyloxapol (Tacholiquin, Alevaire) with physiological saline as inhalation carrier solutions]

[Article in German]

Fevrier D, Bachofen H.

By means of a double-blind crossover study the effects of tyloxapol (Tacholiquin, Alevaire) and saline as carrier solutions for the inhalation of beta-agonists have been compared in 24 paitents with bronchial asthma. Specific airway conductance was measured repeatedly over a 2-hour period in order to assess changes of airway caliber due to the inhalation. The results reveal a significant bronchoconstrictive effect of tyloxapol as compared with saline. The bronchodilator activity of solutions with tyloxapol and beta-agonists (orciprenaline, salbutamol) was no better than those with saline and the same beta-agonists. However, side effects (symptoms of airway irritation, increase of pulse rate) were more pronounced with tyloxapol. In view of the direct effects of inhalation with a beta-agonist, no advantage of the expensive carrier solution tyloxapol over saline could be shown.

Publication Types:
- Clinical Trial
- Controlled Clinical Trial
- Randomized Controlled Trial

PMID: 766165 [PubMed - indexed for MEDLINE]

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1: Cochrane Database Syst Rev. 2000;(2):CD001149. Related Articles, Links

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Synthetic surfactant for respiratory distress syndrome in preterm infants.

Soll RF.

Department of Pediatrics, University of Vermont College of Medicine, A-121 Medical Alumni Building, Burlington, Vermont 05405-0068, USA. rsoll@salus.med.uvm.edu

BACKGROUND: This section is under preparation and will be included in the next issue. OBJECTIVES: To assess the effect of intratracheal administration of synthetic surfactant in premature newborns with established respiratory distress syndrome (RDS). SEARCH STRATEGY: Searches were made of the Oxford Database of Perinatal Trials, Medline (MeSH terms: pulmonary surfactants; limits: age groups, newborn infant; publication types, clinical trial), previous reviews including cross references, abstracts, conference and symposia proceedings, expert informants, and journal handsearching in the English language. SELECTION CRITERIA: Randomized controlled trials which compared the effect of synthetic surfactant treatment to routine management in the treatment of preterm infants with respiratory distress syndrome. DATA COLLECTION AND ANALYSIS: Data regarding clinical outcome including the incidence of pneumothorax, pulmonary interstitial emphysema, pulmonary hemorrhage, patent ductus arteriosus, necrotizing enterocolitis, apnea of prematurity, intraventricular hemorrhage (any grade, and severe intraventricular hemorrhage), bronchopulmonary dysplasia, neonatal mortality, bronchopulmonary dysplasia or death, retinopathy of prematurity (any retinopathy, and retinopathy greater than Stage 3), mortality at hospital discharge, mortality to one year of age, and cerebral palsy (any, and moderate/severe cerebral palsy) was excerpted from the report of the clinical trials by the reviewer. Data were analyzed according to the standards of the Cochrane Neonatal Review Group. MAIN RESULTS: Six randomized controlled trials of synthetic surfactant treatment of established respiratory distress syndrome were identified. Five of the studies used Exosurf Neonatal (a synthetic surfactant composed of dipalmitoylphosphatidylcholine, hexadecanol and tyloxapol); one small study utilized a mixture of dipalmitoylphosphatidylcholine (DPPC) and phosphatidylglycerol (PG). Treatment with intratracheal Exosurf Neonatal in premature infants with established respiratory distress syndrome improves pulmonary gas exchange and decreases the requirement for ventilatory support. In individual trials, the use of Exosurf Neonatal resulted in a statistically significant reduction in pneumothorax, patent ductus arteriosus, bronchopulmonary dysplasia

(BPD), BPD or death at 28 days, and mortality. Similar results are seen when these large trials of Exosurf Neonatal are analyzed in conjunction with the smaller trial of dry powdered DPPC and phosphatidylglycerol (PG). The meta-analysis supports a decrease in the risk of pneumothorax (typical relative risk 0.64, 95% CI 0.55, 0.76, typical risk difference -0.09, 95% CI -0.12,-0.06), a decrease in the risk of pulmonary interstitial emphysema (typical relative risk 0.62, 95% CI 0.54, 0.71, typical risk difference -0.12, 95% CI -0.16, -0.09), a decrease in the risk of patent ductus arteriosus (typical relative risk 0.90, 95% CI 0.84, 0.97; typical risk difference -0.06 95% CI -0.10, -0.02), a decrease in the risk of intraventricular hemorrhage (typical relative risk 0.88, 95% CI 0.77, 0.99; typical risk difference -0.04, 95% CI -0.08, -0.00), a decrease in the risk of bronchopulmonary dysplasia (typical relative risk 0.75, 95% CI 0.61, 0.92; typical risk difference -0.04, 95% CI -0.06, -0.01), a decrease in the risk of neonatal mortality (typical relative risk 0. 73, 95% CI 0.61, 0.88; typical risk difference -0.05, 95% CI -0.07, -0.02), a decrease in the risk of bronchopulmonary dysplasia or death at 28 days (typical relative risk 0.73, 95% CI 0.65, 0.83; typical risk difference -0.06, 95% CI -0.11, -0.05), a decrease in the risk of mortality prior to hospital discharge (typical relative risk 0.79, 95% CI 0.68, 0.92; typical risk difference -0.05, 95% CI -0.07, -0.02) and a decrease in the risk of mortality during the first year of life (typical relative risk 0.80, 95% CI 0.69, 0.94; typical risk difference -0.04, 95% CI -0.07, -0.01). (ABS

Publication Types:
- Review
- Review, Academic

PMID: 10796417 [PubMed - indexed for MEDLINE]

1: Bratisl Lek Listy. 1997 Feb;98(2):73-9. Related Articles, Links

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Related Resources

[Sleep-related breathing disorders--an interdisciplinary topic in undergraduate and postgraduate medical education]

[Article in Slovak]

Tomori Z, Donic V, Koval S.

Ustav patofyziologie Lekarskej fakulty Univerzity P.J. Safarika v Kosiciach. tomoriz@kosice.upjs.sk

Sleep-related breathing disorders (SRBD) include several disorders gradually developing from simple and loud snoring through upper airway resistance syndrome and sleep apnoea up to the Pickwickian syndrome. They are manifestant as a respiratory distress and apnoeic episodes, desaturation of oxygen in the blood and interruption of sleep. These symptoms are demonstrated in a case of a patient with the Pickwickian syndrome. SRBD may result in severe secondary life-threatening cardiovascular complications (nocturnal arrhythmias, sudden cardiac death, stroke and pulmonary oedema). They may contribute also to the development of important disorders of public health such as hypertension, obesity, and traffic accidents resulting from hypersomnolence and fatigue. (Tab. 1, Fig. 3, Ref. 46.)

PMID: 9264812 [PubMed - indexed for MEDLINE]